I. Amendments to the Claims

1. (Original) A resonator for attenuating acoustic pressure pulsation in an air passage, the resonator comprising:

a neck attached in a side branch configuration with the air passage, the neck having a neck length;

at least one wall forming a resonator chamber;

a first member located within the resonator chamber, the first member cooperating with the at least one wall to form a resonator volume; and

a first actuator coupled to the first member, and configured to translate the first member changing the resonator volume and the neck length.

2. (Withdrawn) The resonator according to claim 1, wherein the first actuator includes a motor and a crank shaft.

3. (Original) The resonator according to claim 1, wherein the first actuator includes a motor and a screw.

4. (Original) The resonator according to claim 1, further comprising a second actuator coupled with the first member and the neck.

5. (Original) The resonator according to claim 4, wherein the second actuator is configured to vary the neck length.

6. (Original) The resonator according to claim 5, wherein the second actuator includes a motor and a screw.

7. (Original) The resonator according to claim 1, further comprising a second member coupled to the neck and configured to change the resonator volume in relation to the neck length.

8. (Withdrawn) The resonator according to claim 7, further comprising a biasing member coupled to the second member.

9. (Withdrawn) The resonator according to claim 8, wherein the biasing member is configured to bias the second member away from the wall thereby reducing the resonator volume.

10. (Withdrawn) The resonator according to claim 9, further comprising a stop attached to the at least one wall and configured to define a default position of the second member corresponding to a maximum resonator volume reduction due to the second member.

11. (Withdrawn) The resonator according to claim 1, wherein the first member is configured to push against the second member thereby decreasing the neck length and the resonator volume.

12. (Original) A resonator for attenuating acoustic pressure pulsation from an air passage, the resonator comprising:

a neck attached in a side branch configuration with the air passage, the neck having a neck length;

at least one wall of the resonator forming a resonator chamber;

a first member located within the resonator chamber, the first member cooperating with the at least one wall to form a resonator volume;

a first actuator coupled to the first member and configured to translate the first member changing the resonator volume and the neck length; and

a second actuator coupled with the first member and the neck.

13. (Original) The resonator according to claim 12, wherein the second actuator is configured to vary the neck length.

14. (Original) The resonator according to claim 12, wherein the second actuator includes a motor and a screw.

15. (Original) A resonator for attenuating acoustic vibration from an air passage, the resonator comprising:

a neck attached in a side branch configuration with the air passage, the neck having a neck length;

at least one wall of the resonator forming a resonator chamber;

a first member located within the resonator chamber, the first member cooperating with the at least one wall to form a resonator volume;

an actuator coupled to the first member and configured to translate the first member changing the resonator volume and the neck length; and

a second member coupled to the neck and configured to change the resonator volume in relation to the neck length.

16. (Withdrawn) The resonator according to claim 15, further comprising a biasing member coupled to the second member.

17. (Withdrawn) The resonator according to claim 15, wherein the biasing member is configured to bias the second member away from the wall thereby reducing the resonator volume.

18. (Withdrawn) The resonator according to claim 15, further comprising a stop attached to the at least one wall and configured to define a default position of the second member corresponding to a maximum resonator volume reduction due to the second member.

19. (Withdrawn) The resonator according to claim 15, wherein the first member is configured to push against the second member thereby decreasing the neck length and the resonator volume.